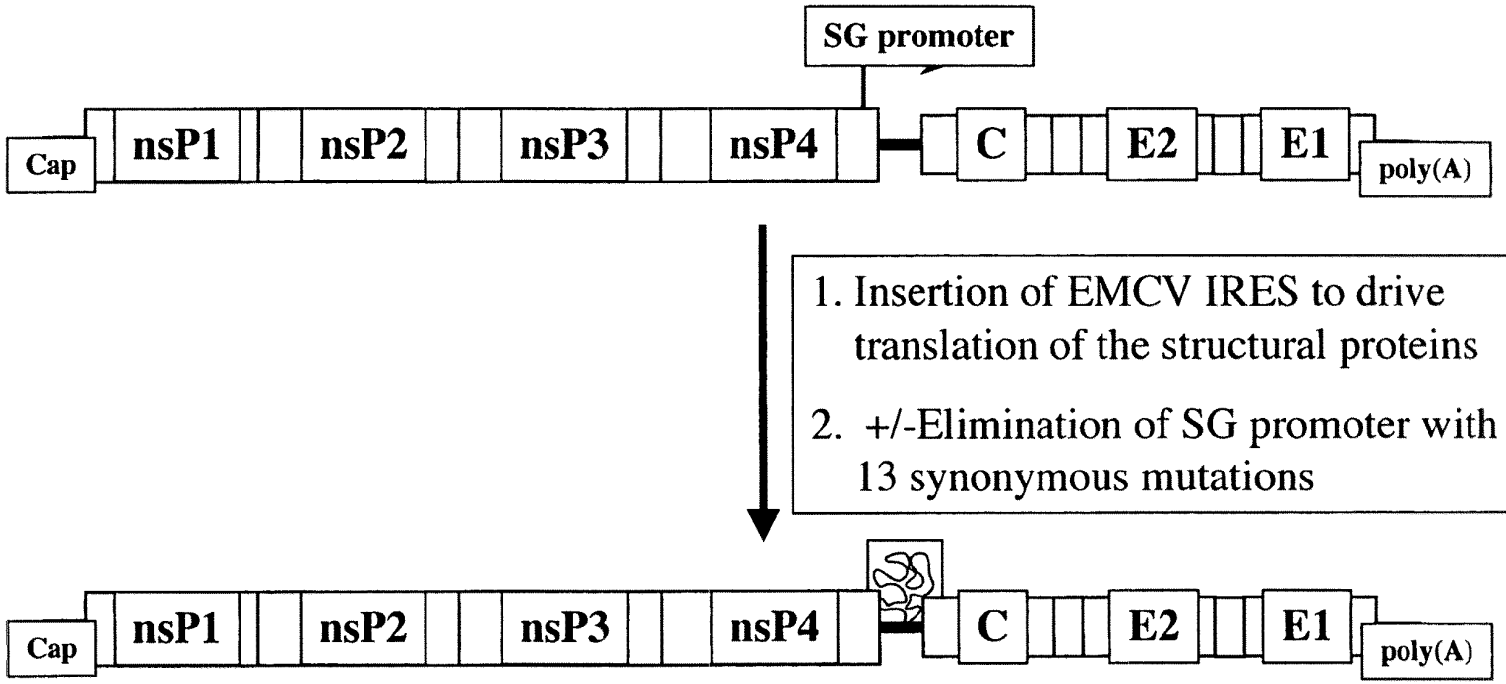
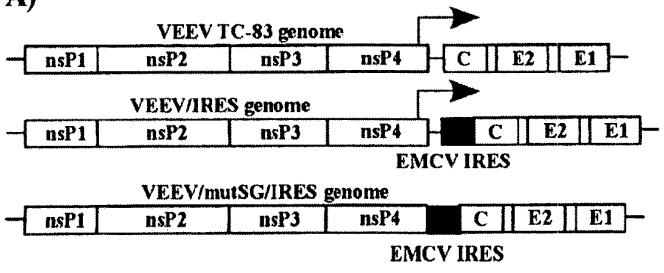


A)



	RNA infectivity PFU/μg	Virus titers PFU/ml at 24 h	Plaque sizes (mm)
	$1\text{-}3\times10^{6}$	1.5×10^{10}	3-4
	$1\text{-}3\times10^{6}$	1×10^{9}	3-4
	$\sim1\text{-}2\times10^{5}$	$\sim5\times10^{5}$	heterogeneous

Fig. 1A

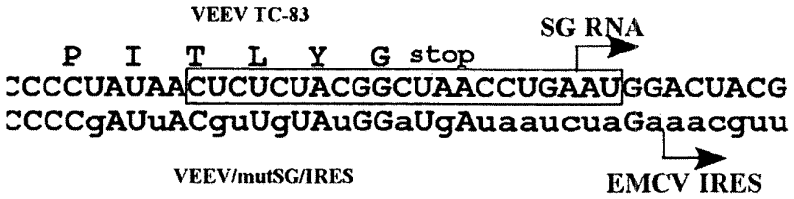
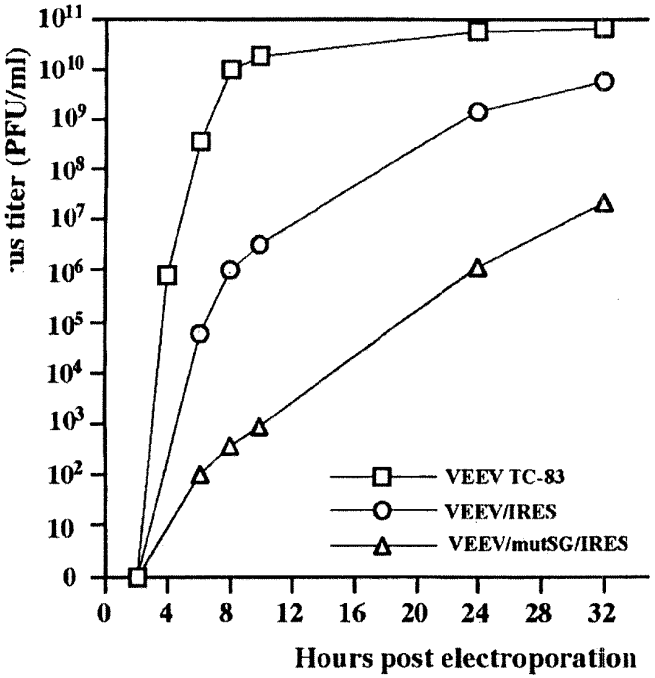


Fig. 1B

Fig. 1C



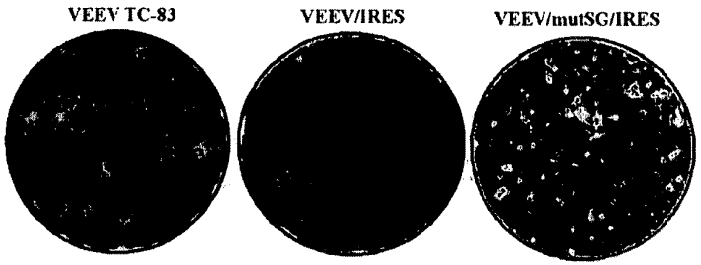


Fig. 1D

Mutation	Isolate 1	Isolate 2	aa change
$A_{1613} \rightarrow G$	+	+	Silent
$C_{1616} \rightarrow A$	+	+	Silent
$T_{1619} \rightarrow C$	+	+	Silent
$T_{2176} \rightarrow A$	+	-	Silent
$A_{2758} \rightarrow G$	+	+	$Y_{370} \rightarrow C$
$A_{2760} \rightarrow C$	+	-	$K_{371} \rightarrow Q$
$T_{9702} \rightarrow C$	+	+	Silent
$T_{10299} \rightarrow G$	+	+	Silent

Fig. 2A

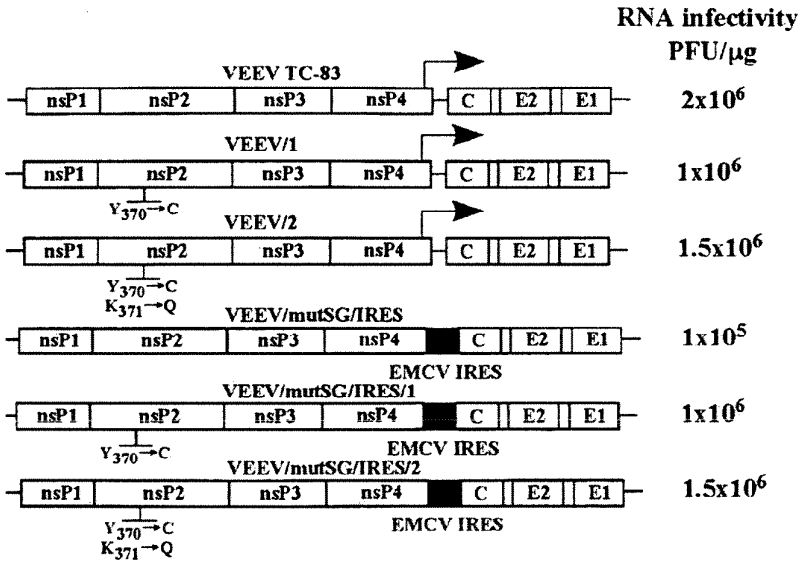


Fig. 2B

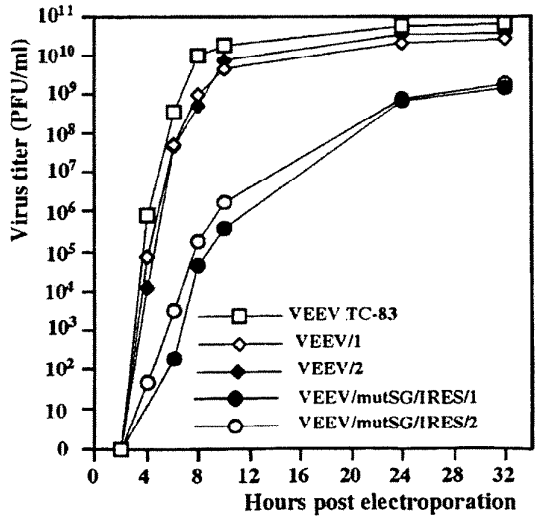


Fig. 2C

Plaque isolates	$P_{349} \rightarrow T$	$Y_{370} \rightarrow C$	$K_{371} \rightarrow Q$	$D_{418} \rightarrow A$	$K_{423} \rightarrow T$
Orig. pl 1		+			
Orig. pl 2		+	+		
Orig. pl 3		+			
Orig. pl 4	+				
Orig. pl 5					+
Pass. pl 1		+			
Pass. pl 2		+			
Pass. pl 3		+			
Pass. pl 4				+	
Pass. pl 5					+

Fig. 3A

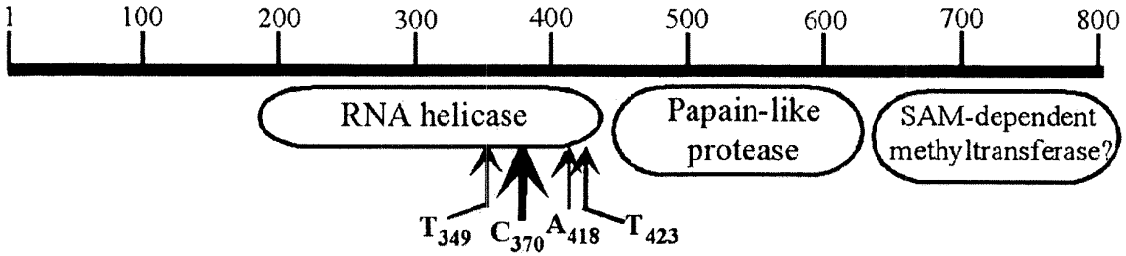


Fig. 3B

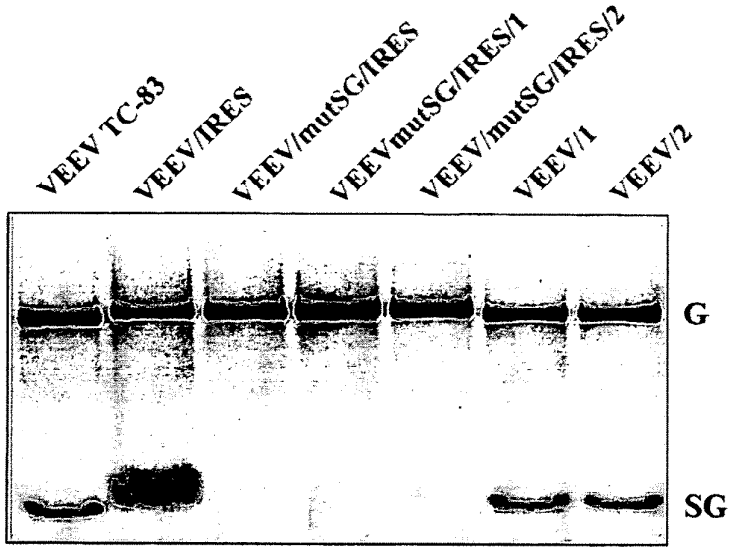

VEEV TC-83
VEEV/IRES
VEEV/mutSG/IRES
VEEVmutSG/IRES/1
VEEV/mutSG/IRES/2
VEEV/1
VEEV/2
G
SG

Fig. 4A

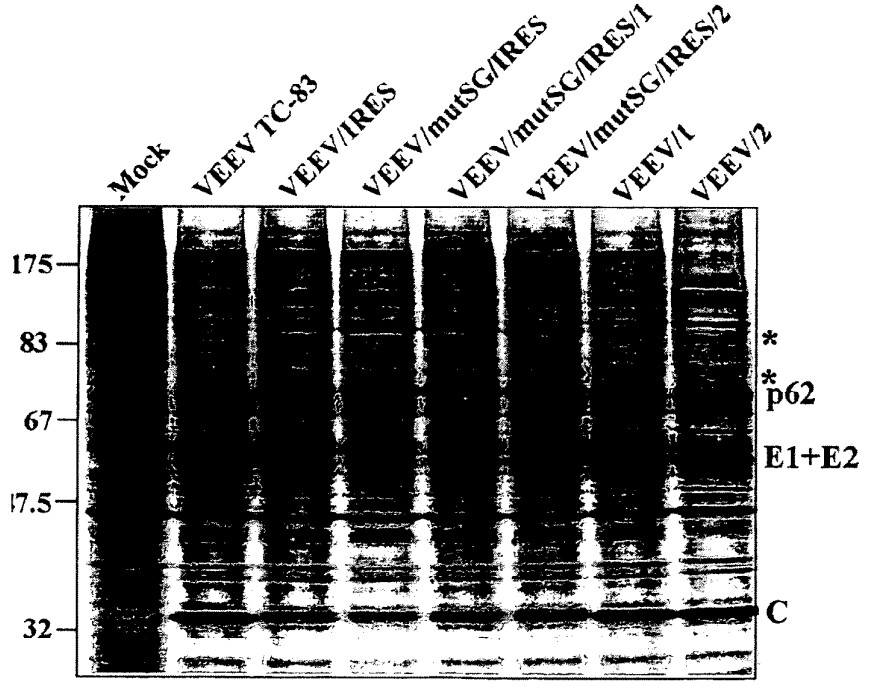

Mock
VEEV TC-83
VEEV/IRES
VEEV/mutSG/IRES
VEEV/mutSG/IRES/1
VEEV/mutSG/IRES/2
VEEV/1
VEEV/2
175
83
67
17.5
32
*
*
p62
E1+E2
C

Fig. 4B

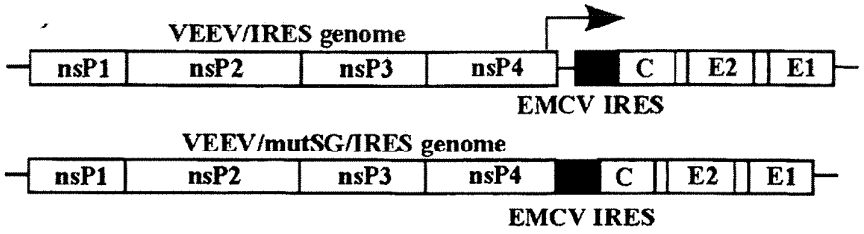


Fig. 5A

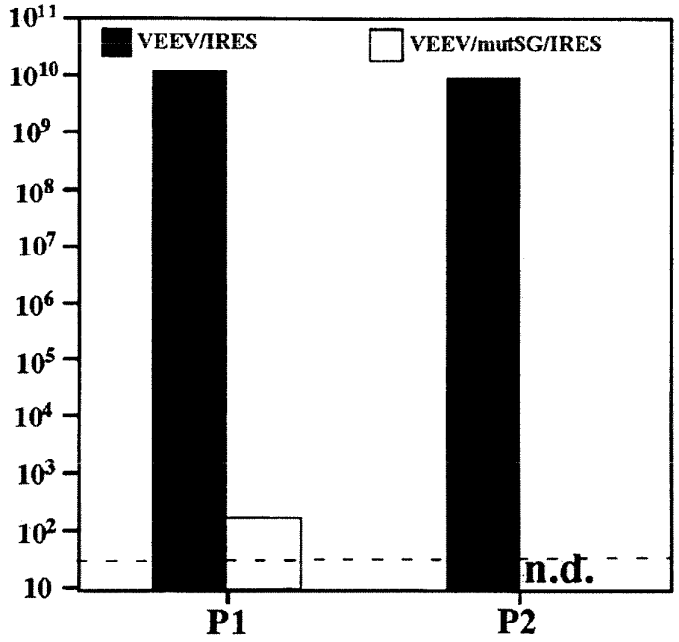


Fig. 5B

ATGGACTACGACATAGTCTAGTCCGCCA----tatggccacaaccATG pl. 1
ATGGACTACGACATAGTCTAGTCCGCCAAGtctatggccacaaccATG pl. 2
ATGGACTACGACATAGTCTAGTCCGCCAAG----------ATG TC-83

Fig. 5C

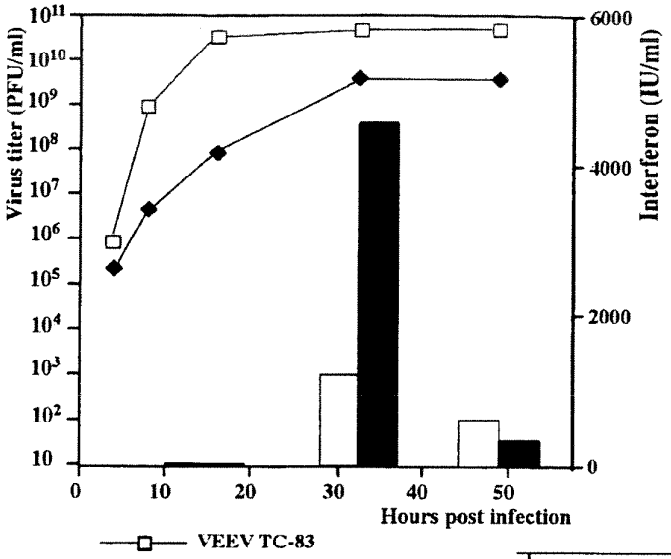


Fig. 6

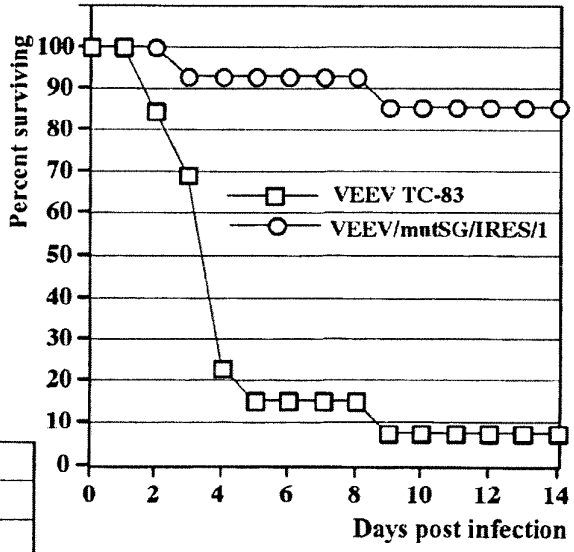


Fig. 7

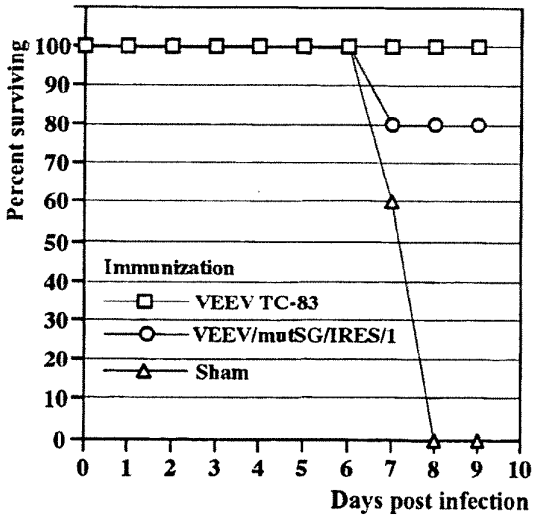


Fig. 8

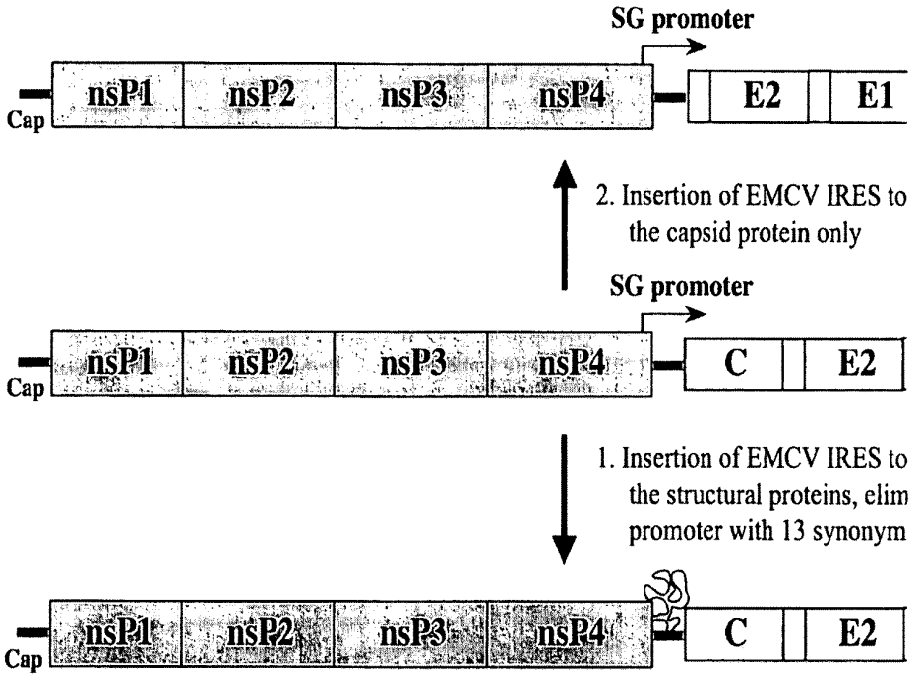

SG promoter
Cap
nsP1
nsP2
nsP3
nsP4
E2
E1
2. Insertion of EMCV IRES to the capsid protein only
SG promoter
Cap
nsP1
nsP2
nsP3
nsP4
C
E2
1. Insertion of EMCV IRES to the structural proteins, elim promoter with 13 synonym
Cap
nsP1
nsP2
nsP3
nsP4
C
E2

Fig.9